WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device comprising the steps of:

(a) forming a MOS type transistor on a semiconductor substrate;

(b) forming an interlayer insulating film including a hydrogen containing layer, the interlayer insulating film covering the MOS type transistor;

(c) forming a wiring layer on the interlayer insulating film;

(d) forming a hydrogen transmission preventing film covering the MOS type transistor and the wiring layer; and

(e) releasing hydrogen from the hydrogen containing film.

2. A method of manufacturing a semiconductor device according to claim 1, wherein said step (d) forms a silicon nitride film covering the MOS type transistor and the wiring layer.

3. A method of manufacturing a semiconductor device according to claim 1, wherein said step (e) performs heat treatment at a temperature equal to or higher than a temperature allowing hydrogen to release from the hydrogen containing film.

4. A method of manufacturing a semiconductor device according to claim 1, wherein said step (e) performs heat treatment in a nitrogen gas atmosphere not containing hydrogen.

5. A method of manufacturing a semiconductor device according to claim 1, wherein said step (b) comprises the steps of:

(b-1) coating liquid material which contains hydrogen containing resin on the semiconductor substrate; and

(b-2) changing the coated liquid material which contains the hydrogen containing resin to a ceramic state.

6. A method of manufacturing a semiconductor device according to claim 5, wherein said step (b-1) coats liquid material which contains hydrogen silsesquioxane resin on the semiconductor substrate.

7. A method of manufacturing a semiconductor device according to claim 6, wherein said step (b-2) comprises the steps of:

(b-2-1) performing heat treatment for changing to a pre-ceramic state in an inert gas atmosphere; and

(b-2-2) performing heat treatment for changing to a ceramic state in an oxidizing atmosphere at a temperature higher than a temperature for changing to the pre-ceramic state.

8. A method of manufacturing a semiconductor device according to claim 7, wherein said step (b-2-1) performs heat treatment a plurality of stages at a temperature lower than the temperature for changing to the ceramic state, starting from a lower temperature side to a higher temperature side.

9. A method of manufacturing a semiconductor device according to claim 1, wherein said step (c) forms a lamination structure of Ti / Al alloy / TiN.

10. A method of manufacturing a semiconductor device according to claim 1, wherein said step (c) forms a lamination structure of Ti / Al-Si-Cu alloy / TiN.

11. A method of manufacturing a semiconductor device according to claim 1, wherein said step (c) includes a step of forming a plurality of adjacent wiring layers on the interlayer insulating film, and said step (d) includes a step of forming the hydrogen transmission preventing film as thick as can form a groove between adjacent wiring layers.

12. A method of manufacturing a semiconductor device according to claim 1, further comprising the steps of:

preparing hydrogen release characteristics between a heat treatment temperature and a hydrogen release amount of the hydrogen containing film;

determining a temperature which can supply hydrogen necessary for lowering interface state density of a channel region of the MOS type transistor, in accordance with the hydrogen release characteristics; and

performing heat treatment at the determined temperature.

13. A method of manufacturing a semiconductor device according to claim 1, wherein said step (a) of forming a MOS type transistor on a semiconductor substrate includes a step of forming a metal silicide film on a source region, a gate electrode and a drain region of the MOS type transistor.

14. A semiconductor device comprising:

a semiconductor substrate;

a MOS type transistor formed on said semiconductor substrate, said MOS type transistor including a source, a gate and a drain;

an interlayer insulating film formed on the semiconductor substrate, said interlayer insulating film covering said MOS type transistor and including a hydrogen resident film;

a wiring layer formed on said interlayer insulating film; and

a hydrogen transmission preventing film covering said MOS type transistor and said wiring layer.

15. A semiconductor device according to claim 14, wherein said hydrogen resident film contains hydrogen silsesquioxane resin.

16. A semiconductor device according to claim 14, wherein said hydrogen transmission preventing film includes a silicon nitride film.

17. A semiconductor device according to claim 14, wherein said wiring layer has a lamination structure of Ti / Al alloy / TiN.

18. A semiconductor device according to claim 14, wherein said wiring layer has a lamination structure of Ti / Al-Si-Cu alloy / TiN.

19. A semiconductor device according to claim 14, wherein said wiring layer includes a plurality of adjacent wiring layers, and said hydrogen transmission preventing film is formed as thick as can form a groove between adjacent wiring layers.

20. A semiconductor device according to claim 15, wherein a silicide film is formed on the source, the gate and the drain.

21. A semiconductor device according to claim 14, wherein a hydrogen supply path for supplying the channel region of the MOS type transistor is formed between the channel region and said hydrogen resident film.